

(OR)  
(b)

## SOLID WASTE MANAGEMENT

Solid waste management is the systematic management of the generation, transfer, recycling and disposal of solid waste (discarded leftover of our advanced consumer society).

### METHODS :-

**REDUCE** Reduction of solid waste is the first step or method to manage solid waste

**RECYCLE** Recycling of products is also necessary in this process

**REUSE** By reusing the waste, reduction and recycling can be made easy

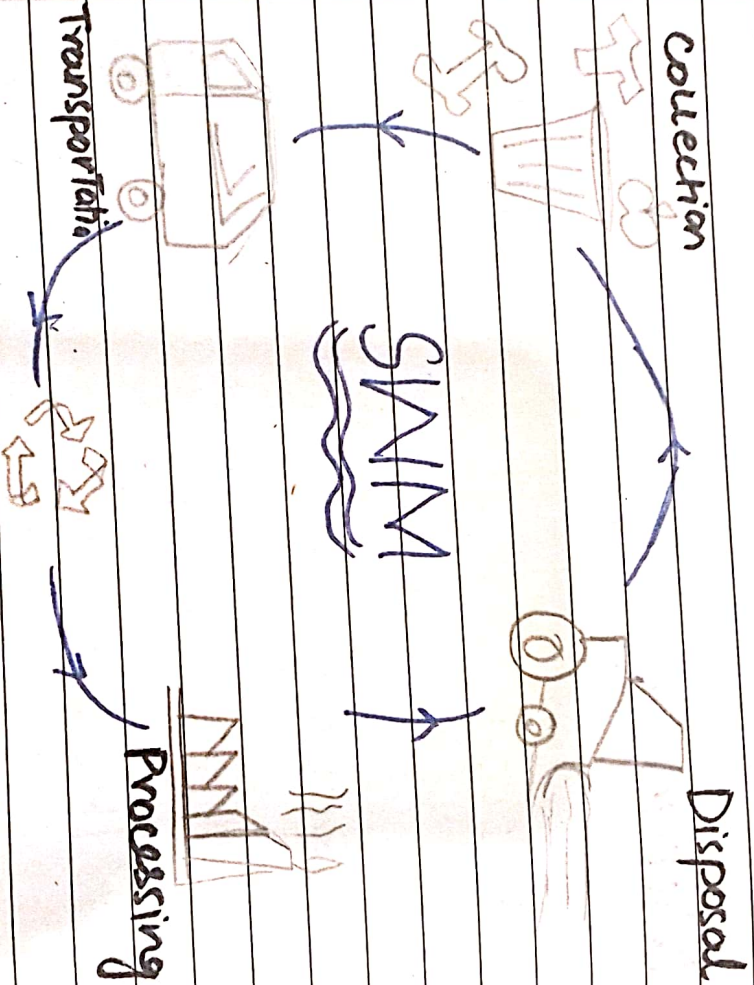
**RECOVERY** Recovering energy from the waste.

**LANDFILL** Safe disposal of waste.

Date: \_\_\_\_\_

Effective waste management often involves the combination of these methods according to needs and capabilities of the region.

### Process Flow of SWM:



### Recovery

### SWM in Pakistan:

Pakistan generates 30 million tons of solid waste per year which is not properly treated.

(c)

Date: \_\_\_\_\_

## BALANCED DIET

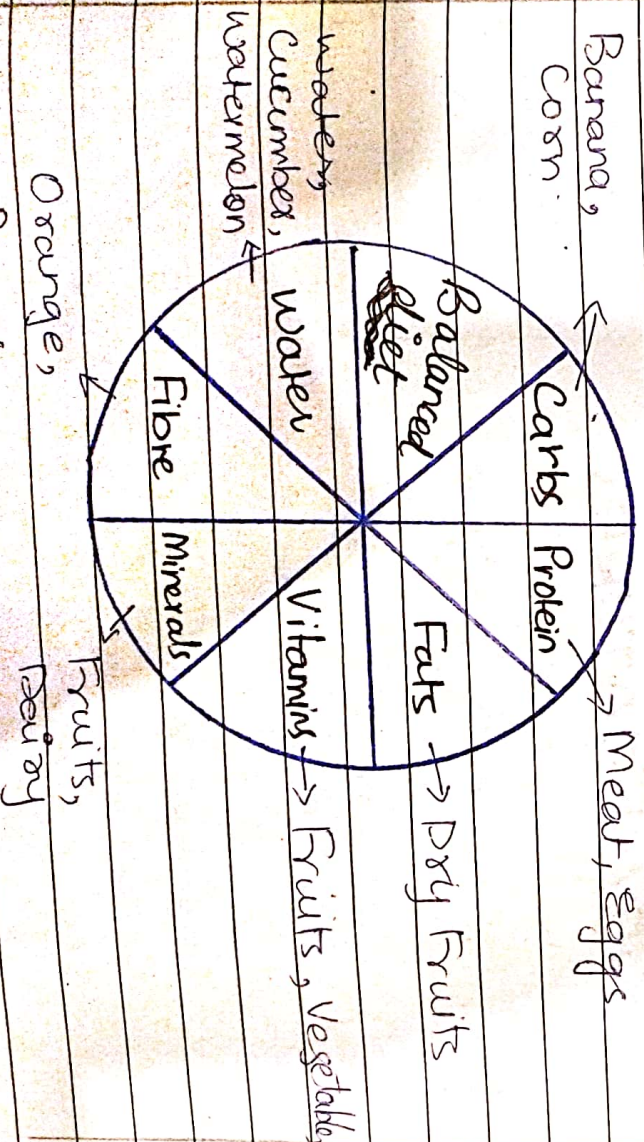
A balanced diet is a one which provides enough amount of all nutrients, not too much or not too little of proteins, fats, carbohydrates, mineral and vitamins.

### Components of Balanced Diet:

Balanced Diet includes:

- Proteins
- fats
- Carbohydrates
- Minerals
- Vitamins

### Sources of Balanced diet:



## Benefits:

- 1 - Balanced diet helps to build muscles.
- 2 - It strengthens bones.
- 3 - It boosts immunity.

X ————— X

(a)

COP-28

(UNEP) Conference of Parties on the issue of climate change held its 28<sup>th</sup> meeting in UAE in Nov 2023. Its main goal is to limit global temp increase to 1.5°C.

## KEY FEATURES

- 1 - The main feature of COP 28 is that it concluded with an agreement of "start of 1<sup>st</sup> end of fossil fuel era".
- 2 - The Green Climate Fund (GCF) secured new pledges from six countries.

3- Eight Donor govts committed over \$ 174 billion to the Least Developed Countries fund and Special Climate Change Fund.

4- It promised to implement strategies to reduce energy consumption of cooling system.

5- Phasing out refrigerators that contribute to climate warming.

Loss and damage Fund: Under COP 28 \$ 700 million pledged but it's not enough. In fact it's less than 0.2% of what is needed.

Reduce emissions to reach Net Zero Target.

Pledges from developed countries who contribute largely in emission

Spend on developing countries who suffer the most due to Climate change.

(a)

## RENEWABLE RESOURCES

### UNDER CPEC

#### ① Cacho Wind Power Project

A project under CPEC is a renewable resource project, installed in Thatta, Sindh. Its 50 MW energy.

#### ② Karot Hydropower Project

Its located in Jhelum, Punjab. It created more than 4000 jobs during construction. Its a hydropower plant. Its installed capacity is 720MW.

#### ③ Arad Patan Hydropower Project

It is also located in Sindh, Punjab. Its an independent power producer. It created over 3000 jobs.

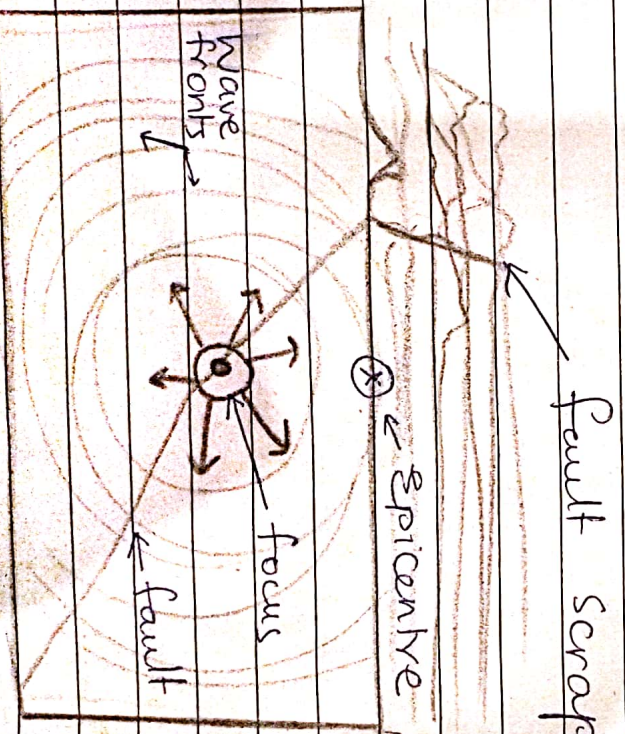
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## Q4 (a)

### EARTHQUAKES

#### Generation

The tectonic plates in the earth's crust are always moving. But they stick at their edges ~~due to~~ ~~because~~ friction. When the stress on edges overcomes friction, sudden energy is released in the form of seismic waves which creates vibration in the earth's crust as a result of abrupt movement in tectonic plates and causes earth to shake.



Date: \_\_\_\_\_

Earthquake

1- Caused by sudden energy release in the form of seismic waves

Tsunami

2- Caused by displacement of large body of water.

1- Under the earth's crust

2- Mostly in ocean body

3- Can affect the region near epicentre

3- Can affect coastlines

(b)

## CORIOLIS FORCE

Coriolis Force is an apparent force that acts on a mass moving in a rotating system. Such as Earth.

It deflects the moving object to the right in the Northern Hemisphere and to the left in Southern Hemisphere.

It affects the direction of wind and ocean currents.

## HURRICANE

### Reveration:

Hurricane is a tropical



that refers to a large scale closed circulation system in the atmosphere which combines low pressure and strong winds, that rotates counter-clockwise in Northern hemisphere and clockwise in Southern hemisphere.

All tropical cyclones begin from over warm ocean and loses strength when they move over cool water and land.

## Effects

- 1 - Hurricane carry a lot of rain and causes flood
- 2 - Storm surge
- 3 - Tornadoes.

(C)

## SOLAR ECLIPSE

## LUNAR ECLIPSE

When moon comes b/w sun and earth

When earth comes in b/w sun and moon

② When moon casts shadow on earth

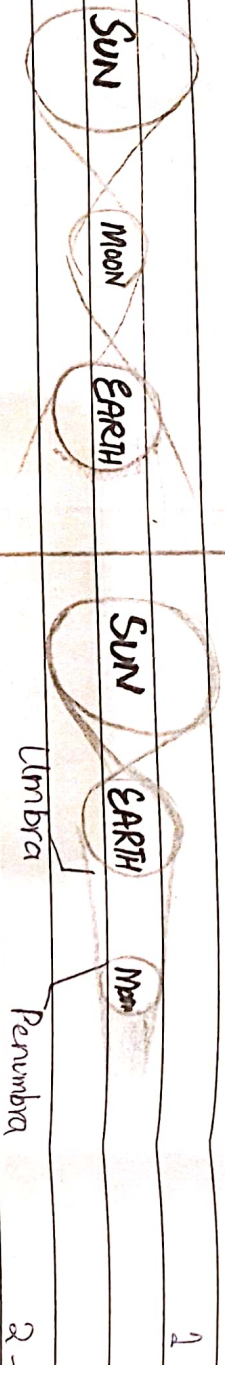
When moon comes in earth's shadow.

③ When New moon occurs.

When full moon occurs.

Date: \_\_\_\_\_

Types of solar eclipse are	Its types are
i- Total solar eclipse	i- Total lunar eclipse
ii- Partial solar eclipse	ii- Partial lunar eclipse
iii- Annular solar eclipse	iii- Penumbra lunar eclipse.



(d)

### Doping in semiconductors

Doping in semiconductors involves intentionally introducing impurities to a crystal lattice of semiconductor material to modify its electrical properties.

There are two types of Doping.

N-Type Doping: when dopant is an element having  $Se^-$  in valence shell. Eg: Phosphorus.

P-Type Doping: when dopant has  $3e^-$  in valence shell. Eg Boron

Date: \_\_\_\_\_

## CERAMICS

These Ceramics are inorganic, non-metallic materials made by shaping and firing at high temperature.

### Types

1- Traditional Ceramics (Clay based) are used in pottery, bricks & tiles.

2- Advanced Ceramics (High Performance) are used in cutting tools and automotive components.

3- Bio ceramics are used in ~~ceramics~~ dental and orthopedic implants.

4- glass-ceramics are used in cookware.

X

X

# ABILITY

Q6

(a)

Data

5 years ago,

$$F = \text{Father's Age} = F - 5$$

$$S = \text{Son's Age} = (S - 5)$$

Since

Father's age is thrice the Son's Age

$$F = 3S$$

$$F - 5 = 3(S - 5)$$

$$F - 5 = 3[(30) - 5]$$

$$F - 5 = 90 - 15$$

$$F - 5 = 75$$

$$F = 75 + 5$$

$$\boxed{F = 80}$$

Father is 80 years old Now.

Answer

# ABILITY

Q6

(a)

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Father is 80 years old Now.

Answer

b)

Data

Mean of 10, 30, ~~Y~~ and 50 = 50  
calculate Y = ?

∴ Mean =  $\frac{\text{Sum of observations}}{\text{no of observations}}$

$$\frac{10 + 30 + Y + 50}{4} = 50$$

$$\frac{90 + Y}{4} = 50$$

$$90 + Y = 50 \times 4$$

$$90 + Y = 200$$

$$Y = 200 - 90$$

$$\boxed{Y = 110}$$

Aus.

c)

i) 2, 6, 18, 54, 162  
 $(5)^2$      $(4)^4$      $(3)^3$      $(2)^2$      $(1)^2$

ii) 3125, 256, 27, 4, 1

d)

300 304

If  $A \times B = 320$

$A : B = 1 : 5$

$A^2 - B^2 = ?$

~~A = 8~~  $B = 5A$

If  $A = 8$

$B = 5(8) = B = 40$

$1 : 5$   
 $8 : 40 \checkmark$

$8 \times 40 = 320 \checkmark$

$(8)^2 - (40)^2$

$64 - 1600$

$1536$  Ans

SHOKIA

Q8

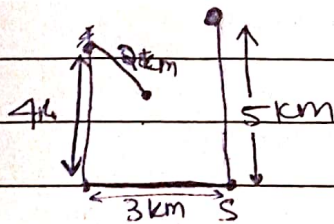
c) = 12 triangles

d) Factors affecting IQ

Following factors affect IQ

- i) Genetics
- ii) Environment
- iii) Education
- iv) Nutrition
- v) Stimulation and enrichment
- vi) Cultural factors.

a)



It is 2 km away from initial point.

Ans



Data

b

2 scooties = 96000 each

1 scooty =

A = 96000: 20% profit

B = 96000: 20% loss

First time

1.20 times, CP = 96000

0.80 times, CP = 96000

$(96000)(1.20)$

→ Cost Price of First Scooty = 80,000

$96000 \times 0.80$

→ Cost Price of Second Scooty = 120,000

Both = 200,000

Overall Gain or loss

$192,000 - 200,000$

$= -8000$

Since its in -ive so it indicates loss

Ans